INSTRUCTIONS

For Installation of the Arduino IDE and Libraries

For Programming the Pill Reminder

Shrimpware LLC

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1.   OVERVIEW.

The Pill Reminder software needs to be compiled and uploaded to the Arduino Uno board in order for the Pill Reminder to function. The Pill Reminder software and essential libraries are included with this release package in the archive file "Pill_Reminder_Release_Package_v1.zip". After unzipping this archive, open the folder "Pill_Reminder_Release_Package_v1" and then the "Software" folder. There are two subfolders under "Software": "Pill_Reminder_101" and "Libraries". "Pill_Reminder_101" is the software that you need to compile and upload to the Uno board. Before this software will compile, the files under "Libraries" need to be installed into the Arduino Integrated Development Environment (IDE).

This document describes the steps necessary to:

1)   Download and install the Arduino IDE on your computer.
2) Import the libraries included with this package into the Arduino IDE on your computer.
3) Compile and upload the software to your Arduino Uno.

It is recommended that you perform these operations before the Final Assembly of the Pill Reminder, as the Pill Reminder software contains self testing features that may be useful during final assembly.

2.   DOWNLOAD AND INSTALL THE ARDUINO IDE.

Note: the Pill Reminder software has been developed under Arduino version 1.05. It is strongly recommended that you install this specific version on your computer, even if a newer version is available. Arduino 1.05 is the only version that the Pill Reminder has been tested with.

In order to install the Arduino IDE on your computer, open up your web browser software and go to:

http://arduino.cc/en/Main/Software

Find "Arduino 1.0.5" on this web page. Below this, you will see links for the following computers:

- Windows Installer, Windows (ZIP file)
- Mac OS X
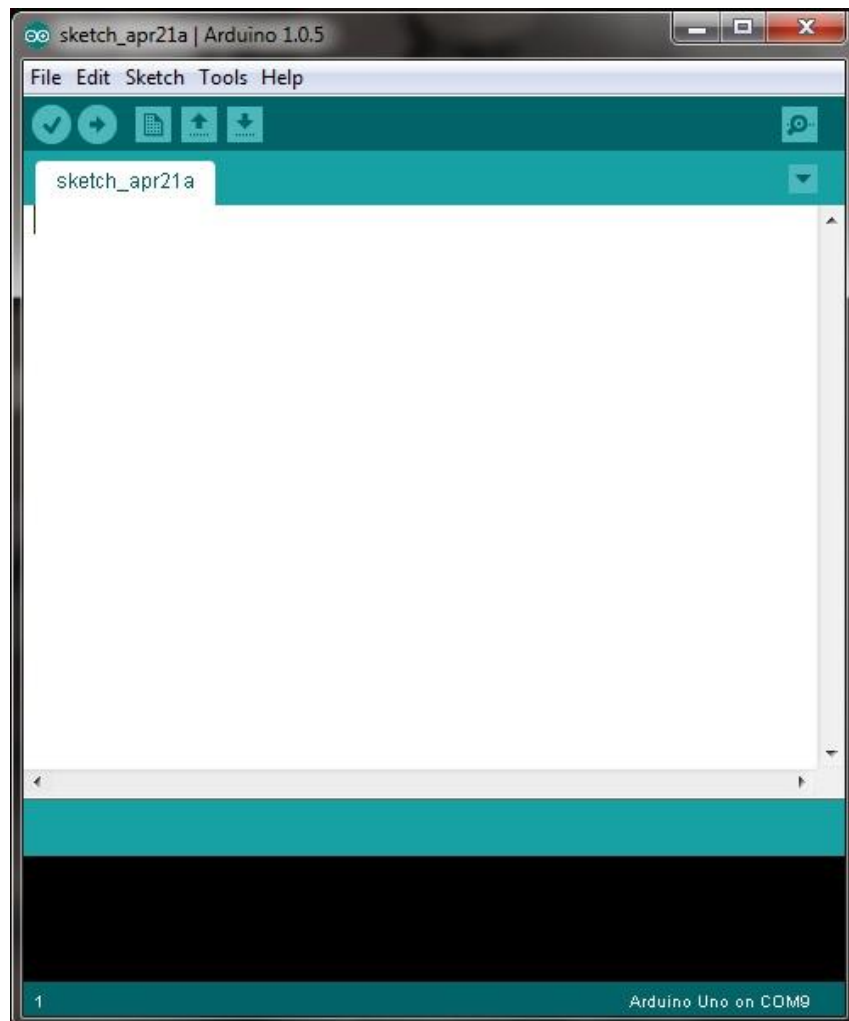- Linux: 32 bit, 64 bit
- source

Click on the link that matches your computer. If you have a Windows computer, you have the choice to either run the installer from the web page by clicking "Windows Installer" or downloading the installation package to your computer by clicking "Windows (ZIP file)". It is recommended that you click on "Windows Installer".

After clicking on the appropriate link for your computer, follow the instructions to install the Arduino IDE on your computer. You can safely ignore any warning messages about the software not being verified or registered. You can accept all defaults that are offered unless you have some reason to change them.

After you have successfully installed the Arduino IDE, you should see the Arduino icon on your desktop:

Double clicking this icon will open the Arduino IDE and show a window similar to the following:
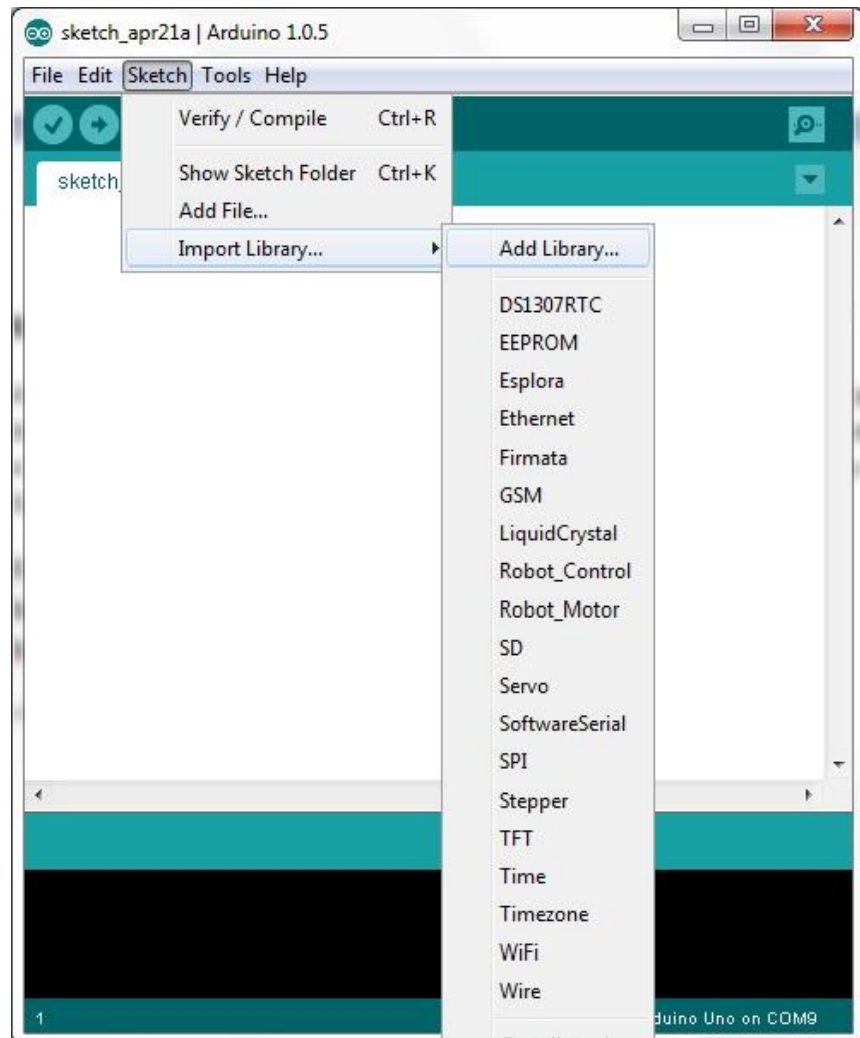
3. INSTALL THE LIBRARIES INTO THE ARDUINO IDE.

The libraries that you need to install into the Arduino IDE are located in the unzipped archive: "Pill_Reminder_Release_Package_v1". Open the "Software" folder. There are two subfolders under "Software": "Pill_Reminder_101" and "Libraries". Open the "Libraries" folder. You will see three subfolders:

- DS1307RTC
- Time
- Timezone

These are the libraries that you need to install.

With the Arduino IDE open on your computer, click on "Sketch", then "Import Library", then "Add Library", as shown below:

After clicking on "Add Library", you will get a dialog box that allows you to navigate to the library folder that you wish to install. Recall that the libraries in your Pill Reminder release package are: "DS1307RTC", "Time" and "Timezone". After each of these libraries are added, they will appear under "Contributed Libraries" at the bottom of the list of libraries.

Note that the list of libraries may vary somewhat from the picture shown above. The libraries that must be in the list are as follows:

- Wire
- EEPROM
- LiquidCrystal
- DS1307RTC
- Time
- Timezone

You may need to close all Arduino IDE windows and reopen the Arduino IDE in order to see that the libraries have been properly installed.

It does not matter where in the list of Libraries these appear, as long as they all are in the list. If any are missing, the software will not compile.

4.   INSTALL THE PILL REMINDER SOFTWARE INTO THE ARDUINO IDE.

With the Arduino IDE open, click on "File", the "Open", and navigate to the unzipped archive: "Pill_Reminder_Release_Package_v1". Open the "Software" folder. There are two subfolders under "Software": "Pill_Reminder_101" and "Libraries". Open the "Pill_Reminder_101" folder and double click on the "Pill_Reminder_101" icon. This will open another Arduino IDE window on your computer with the Pill Reminder software loaded into it. Now click "File", then "Save" to save the Pill Reminder software into your Arduino sketchbook folder.

You can now test for successful installation of the software, the IDE and the libraries by clicking on the check icon at the top left of the IDE window (underneath "File"). A message on the green bar near the bottom will say "Compiling…" for a little while and then "Done compiling" if all is OK, similar to the picture below:

5.   UPLOAD SOFTWARE TO THE ARDUINO UNO.

Connect your Arduino Uno board to a USB port on your computer using the USB cable specified in the Parts List for the Pill Reminder. On a Windows computer, you will see some dialog about Windows finding new hardware and searching for a driver, etc. Just wait a little while, and Windows should finally say that it had found an Arduino Uno on COM <something>. <something> will be some number that is specific to your computer installation. Mac and Linux computers should likewise find and install the Uno automatically, albeit the messages will differ.

You must now close all Arduino IDE windows, and reopen the Arduino IDE. Click on "Tools", then "Serial Port" and make sure that the serial port that your computer assigned your Uno to is checked (if not, check it). Open the "Pill_Reminder_101" program using File | Open… and then navigate to the "Pill_Reminder_101" icon. The program should reappear in the Arduino IDE window.

Click on the right arrow next to the check icon, below "File" on the Arduino IDE. The green bar near the bottom of the IDE window will first say "Compiling sketch…" for a little while, the "Uploading…" for a little while, and finally "Done uploading". *You have successfully compiled the Pill Reminder software and uploaded it you your Arduino Uno!*

You can now unplug the USB cable from your computer and from the Arduino Uno.

NOTE: Once the software is in your Arduino Uno, it is located in flash memory and will remain in the Uno, even after power is removed from the Uno, until some other software is installed. Unless you install some other software on your Uno board, the Pill Reminder software will be loaded in its program memory and it does not need to be uploaded again. If, for some reason, you overwrite this software and need to reload it, you only need to repeat this last step #5 to do so. The Pill Reminder enclosure has a cutout for the USB connector on the Uno board so that future upgrades to the Pill Reminder software may be installed on the completed unit.